

ART. II.—*On Two New Genera of Polyzoa.*

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THE two polyzoa which I describe in the present paper are found encircling the stems of *Cymodocea antarctica*. The first seems to be identical with a form from St. Vincent's Gulf, very briefly described by Mr. Hutton, in the *Transactions of the Royal Society of Tasmania* for 1877, under the name of *Membranipora cincta*. Mr. Hutton remarks that, from the exact regularity of the position of the cells, it ought, perhaps, to be made the type of a new genus. In addition to, and of more importance than the regularity of the arrangement, the structure of the cells is remarkable; and although I have placed it provisionally among the Membraniporidæ, it will probably be necessary to refer it to a distinct family. The other genus is also a very interesting one, and seems not to have been hitherto noticed.

Family MEMBRANIPORIDÆ. (?)

Genus DIPLOPORA.

Polyzoary encrusting; cells occupied by a calcareous membrane in front, and divided into two parts, the posterior half being very much elevated; a narrow transverse portion, a little distance behind the mouth and in front of the elevated part, deficient in calcareous matter, and entirely membranous.

D. cincta, Hutton sp.

The cells are large, oblong, separated by raised margins, and arranged in transverse rows encircling the stems of *Cymodocea antarctica*, either spirally, or as continuous rings. They also form longitudinal series, occasionally bifurcating. The mouth is large, arched above, hollowed below, with a small

tubercle on each side for the attachment of the operculum. Above the mouth on each side is a thick, rigid, vertically-grooved process, usually of a brown or purplish colour. These are so arranged that the spine on one side is further forward than the corresponding one of the next cell on that side, while the opposite spine is posterior to the corresponding one of the adjacent cell. The posterior half of the cell forms a lofty convex or ridged elevation, the surface of which is finely granular. Along each margin on the summit is a flattened, semipyriform, bullate process, the rounded surface being turned towards the inside of the cell. On one side the thick end is posterior, the pointed extremity being continuous with the raised margin; while on the other side the arrangement is reversed, the rounded extremity being anterior. A short distance behind the mouth the calcareous matter is deficient, leaving a space extending the whole width of the cell entirely membranous. The avicularia are of two sorts. The usual form has a large triangular mandible directed forward, is situated at the base of one of the small cells at a bifurcation of a series, and occupies the cell to the top of the elevation. The other, of which I have only seen a single example, occupies the whole width of two cells at a bifurcation, and has a broad, shallow mandible, hollowed in the middle.

Locality.—Queenscliff; Portland, Mr. Maplestone.

The regular transverse arrangement of the cells, the raised continuous posterior parts with the bullate processes, and the dark colour of the large, prominent, grooved, oral spines render this one of the most beautiful of the polyzoa. When broken, the fracture takes place through the membranous part of the cells, so that a detached row may consist of the anterior and posterior halves of the cells of two distinct transverse series.

Family DIASTOPORIDÆ.

Genus DENSIPORA.

Polyzoary forming an encrusting mass, discoid when young, composed of numerous long, closely-packed, tubular cells, continuous throughout the whole thickness, and with the orifices not projecting.

D. corrugata.

This species forms calcareous masses, more or less surrounding the stems of *Cymodocea antarctica*, varying in length up to about an inch, and in diameter to nearly half an inch. The surface is raised into numerous ridges, variously inosculating, and irregularly surrounding the polyzoary. The summit of these ridges generally forms a raised border, composed of a series of vertical, blunt processes, united side to side, except at the rounded extremities. The usual thickness of the polyzoary from the inner surface is about an eighth of an inch. The cells are very narrow, continuous throughout the whole thickness, and closely united, the walls of the contiguous cells being coalescent and indistinguishable. The interior of the cells is obscurely and irregularly transversely ridged, and is sparsely perforated by minute rounded pores. The orifices are circular or polygonal, with several thick calcareous processes from the margin. These are more numerous and larger towards the summits of the ridges, the raised border of which seems to be formed by the peculiar arrangement and union of similar larger processes. The size and shape of the orifices of the cells vary greatly, and between them are frequent smaller pores. The cells are so closely packed and the walls so thin, that the whole surface has a honey-combed appearance.

The examination of full-grown individuals would leave the exact position of this species doubtful, but an inspection of young specimens shows its Diastoporidan characters. The smallest specimen I have is about one-twentieth of an inch in diameter, is discoid, of considerable thickness in the centre, with the cells closely connate, vertical in the middle, and oblique towards the circumference. Among the marginal cells a few small pores are to be seen. The elevated ridges are early developed, and in a specimen an eighth of an inch in diameter are well marked. In completely encircling specimens, the line of coalescence of the margins of the polyzoary is generally readily discernible by the presence of a tortuous ridge, similar to the other corrugations.

Locality.—Queenscliff; Portland, Mr. Maplestone; Warrnambool, Mr. Watts.

EXPLANATION OF PLATE.

Fig. 1. *Diplopora cincta*, magnified 50 diameters.

Fig. 1a. Side view of two cells.

Figs. 1b and c. Two views of the same specimen, showing the avicularia, magnified 25 diameters.

Fig. 2. *Densipora corrugata*, natural size.

Fig. 2a. View of surface, showing the opening of the cells, magnified 50 diameters.

Fig. 2b. Section of the same in depression, showing—at *a* the tubular cells extending the whole thickness, at *b* the openings of the cells on the sides of a ridge viewed very obliquely, and at *c* the projecting summit of the ridge, magnified 25 diameters.
